

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Application Review

Issue Date: DRAFT

Region: Mooresville Regional Office
County: Cleveland
NC Facility ID: 2300377
Inspector's Name: Karyn Kurek
Date of Last Inspection: 05/22/2019
Compliance Code: 3 / Compliance - inspection

<p align="center">Facility Data</p> <p>Applicant (Facility's Name): Clearwater Paper Corporation - Shelby Converting Plant</p> <p>Facility Address: Clearwater Paper Corporation - Shelby Converting Plant 671 Washburn Switch Road Shelby, NC 28150</p> <p>SIC: 2611 / Pulp Mills NAICS: 32211 / Pulp Mills</p> <p>Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V</p>				<p align="center">Permit Applicability (this application only)</p> <p>SIP: 15A NCAC 02Q .0516(c) NSPS: N/A NESHAP: N/A PSD: N/A PSD Avoidance: N/A NC Toxics: 15A NCAC 02D .1100, modeled limits 112(r): N/A Other: N/A</p>																																																			
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<p>Review Engineer: Kevin Godwin</p> <p>Review Engineer's Signature: _____ Date: _____</p>					<p align="center">Comments / Recommendations:</p> <p>Issue 10139/T07 Permit Issue Date: DRAFT Permit Expiration Date: 07/31/2021</p>																																																		

I. Purpose of Application

This permit action is Part II of a significant modification under 15A NCAC 02Q .0516(c). Pursuant to 15A NCAC 02Q .0501(b)(2), the applicant is filing this complete application within 12 months after commencing operation to modify the construction and operation permit to meet the requirements of 40 CFR Part 70. This application will go through a 30-day public comment period and a 45-day EPA review at this time. The Permit Review for the Part I application is attached to this document (see Attachment I).

According to the application, operation commenced on or about July 1, 2018. In addition, with this application Clearwater is adding James Sloan as a Responsible Official.

Application Chronology

Received Part II application	May 6, 2019
Received comments from Mooresville Regional Office (MRO)	May 28, November 12, and November 21, 2019
Received modeling memo from Air Quality Analysis Branch (AQAB)	June 6, 2019
Received revised modeling memo from AQAB	November 20, 2019
Draft sent to Supervisor	January 2, 2020
Draft provided to the applicant and Regional Office	January 9, 2020
DRAFT Permit to Public Notice and EPA	XX
Final Permit Issued	XX

The applicant submitted three updates to the Part II application as follows:

A. An update received on July 15, 2019 states,

“During the recent start-up and initial operation of our new paper machine, we have begun a trial of a new chemical additive. If successful, the new additive, which contains 7.32% VOC by weight, will replace an existing additive which contains no VOC. In addition, we have determined that another chemical additive, which contains 43.53% VOC by weight must be used in the new paper machine to treat the steam pH. The use of these two new chemical additives would increase the potential VOC emissions from the new paper machine from 20.9 to 32.8 tons per year.”

B. An update received on October 23, 2019 states,

“Clearwater is submitting this second update package to make the following additional changes:

- Add a Zoning Consistency Determination obtained from the City of Shelby;
- Add a 3rd emergency fire pump as an insignificant activity;
- Add information for an ongoing trial of a new chemical additive. If successful, the new additive, which contains 25.99% VOC by weight, will be used in full scale production, increasing potential VOC emissions from the new paper machine from 32.8 to 42.3 tons per year;
- As part of the optimization of the new paper machine, we recently added equipment serving the softener containment station, including an entrainment separator – the Softener Containment Mist Separator – which removes particulate matter from the softener containment station exhaust. The exhaust from this separator ties into the exhaust from the Wet Dust Exhaust Separator, increasing the velocity of air from its stack by 5%. This has also changed the distribution of emissions of NC TAPs 1,4-dioxane and ethylene oxide from the new paper machine stacks. Because of the velocity change, NCDAQ has requested that we also submit a revised modeling analysis for NC TAPs. However, the change did not increase the maximum lb/hr emission rate of any pollutant, nor did it increase the maximum modeled ambient impact of any of NC TAPs.”

C. An update received on November 20, 2019 states,

“Clearwater is submitting this third update package to make additional changes as follows:

We have identified two new chemicals for use in the 1S Converting Building. The first chemical is an ink cleaner with a VOC content of 99% by weight, while the second chemical is a solvent with a VOC content of up to 100% by weight. The use of these new chemicals will result in a very small increase in potential VOC emissions from the 1S Converting Building, from 3.0 to 3.6 tons per year. The higher predicted emission rate of NC TAP 2-butanone due to use of these new chemicals is well below the previously modeled emission rate. As such, a revised modeling analysis is not needed.”

Comments from MRO dated November 21, 2019 were forwarded to the applicant. The applicant responded to comments on December 2, 2019 (see Attachment II). On December 19, 2019, DAQ discussed the comments and decided to proceed with the application as submitted.

As part of the applicant’s response, the request was made for DAQ to reconsider the control devices as inherent equipment not required for compliance. This request is beyond the scope of the Part II application. The applicant was informed that this request would not be addressed under the Part II application.

II. Compliance Status

- A. During the most recent compliance inspection, conducted on May 22, 2019 by Ms. Karyn Kurek of the MRO, the facility appeared to be in violation of 02D .0515 “Particulates from Miscellaneous Industrial Processes” for not maintaining the required production records for Paper Machine No. 2 (ID No. CPDPM02-Plant 2) and in violation of 02D .0524, NSPS-Subpart Dc for failure to maintain the required monthly fuel usage records for Boiler No. CPDBOIL02 (Plant 2) and will be issued a Notice of Deficiency for recordkeeping for these two sources.

The inspection report includes a Summary of Changes needed to the permit as follows:

- TAD Mist Exhaust Separator (249 square feet, ID No. CPDTADMISTMES#2) is not installed on this line (Line #2),
- PVOH make-down system (ID No. CPDS29) was not installed with no plans to install this unit and should not be included in the modified permit,
- ID No. CPDBOIL#02 Natural gas-fired boiler No. 2 equipped with low-NOx burners is not rated at 98 million Btu per hour. The faceplate is 96.7 million Btu per hour,
- ID No. CPDS26# Offline printer is not installed at the facility and should not be included in the permit modification, and
- ID No. IS-CPDFP02 Diesel-fired fire pump engine No. 2 (526 brake hp, 448 kW rated capacity) is installed in Plant 2. Notification of operation was received December 17, 2018. The faceplate indicated a brake hp of 176.8 and 220 kW and should be corrected in the permit modification.

- B. Since Permit No. 10139T06 was issued, the following compliance issues have occurred:

On October 29, 2019, the facility submitted a deviation report for the third quarter of 2019. The report cited two deviations as follows:

- During a manufacturer recommended inspection on August 2, 2019 it was discovered that CPDTADMISTMES exhaust fan was damaged and broken loose from the shaft. Emission source CPDPM01 continued to operate without emissions being controlled. Repairs to the exhaust fan were completed and normal operation was restored on August 16, 2019.
- CPDFORMERMES exhaust fan failed to start up along with CPDPM01 following a planned down-day on September 17, 2019. The fan was repaired and restored to operation on September 18, 2019.

On June 21, 2018, the facility was issued a Notice of Violation and Recommendation for Enforcement for violation of Specific Condition 2.1 A.1.d.i. which requires the Permittee to conduct monthly visual inspections of system ductwork and material collection units for Paper Machine No. 1 (CPDPM01) with associated controls. At the time of inspection on June 6, 2018, the facility was unable to provide records showing the inspection was conducted in April 2018. A civil penalty was assessed on July 24, 2018.

III. Changes to Permit

The following table provides a summary of changes made to the Clearwater Paper Corporation - Shelby Converting Plant Air Quality Permit No. 10139T06:

Pages	Section	Description of Changes
N/A	Insignificant Activities Table	Included diesel-fired fire pump engine No. 3 (ID No. IS-CPDFP03) and updated list based on the applicant's comments.
3	Table of Emission Sources	Removed TAD (ID No. CPDTADMISTMES2 [#]) from Paper Machine Line #2. Removed asterisks and footnote requiring Part II application submittal. Updated Permitted Equipment as outlined in the May 22, 2019 inspection report.
11 through 13	2.2 A.2.	Updated toxic air pollutant (TAP) limits based on most recent air dispersion modeling.
13	2.2 B.	Removed requirement for Part II application submittal.
14	3.0	Updated General Conditions to most recent shell version (v5.3, 08/21/2018).

The applicant also identified the following additional insignificant activities to be added to the existing list:

IS-CPD7AMUC1	Seven natural gas-fired air makeup units (6 MMBtu/hr each)
IS-CPD1FCUC1	Natural gas-fired false ceiling unit (1.5 MMBtu/hr)
IS-BALERS1	Baler equipment (exhausts inside Converting No. 1 Building)
IS-BALERS2	Baler equipment (exhausts inside Pulp Warehouse)

IV. Facility Wide Air Toxics

As stated in the June 6, 2019 memo from Nancy Jones, Meteorologist, AQAB, "Clearwater has installed additional equipment including a PVOH make-down system, paper machine, boiler, converting area, and supporting equipment and is requesting to revise limits on certain TAPs. The application triggered modeling requirements to evaluate the two toxics, benzene and formaldehyde, whose rates are expected to exceed the levels outlined in 15A NCAC 02Q .0700. Clearwater is also requesting permit limits for nine additional TAPs: acetaldehyde, 1,4-dioxane, ethylene oxide, methylene chloride, MEK, MIBK, ammonia, styrene, and toluene. The modeling adequately demonstrates compliance, on a source-by-source basis, for all toxics modeled."

As stated in the November 20, 2019 memo from Nancy Jones, Meteorologist, AQAB, "This modeling was an update to the modeling received May 8, 2019 whose review was documented in a memo on June 6, 2019. Clearwater has installed additional equipment including a PVOH make-down system, paper machine, boiler, converting area and supporting equipment and is requesting revised limits on certain TAPs. The modeling was updated because the final design is different from what was initially modeled. The modeling adequately demonstrates compliance, on a source-by-source basis, for all toxics modeled."

The modeled rates are placed in the Permit as limits.

V. Public Notice/EPA and Affected State(s) Review

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit pursuant shall be provided to EPA. Also pursuant to 02Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice provided to the public under 02Q .0521 above.

VI. Other Regulatory Considerations

- A P.E. seal is required for this application and was included (ref. Ted S. White, May 1, 2019).
- A zoning consistency determination is required for this application. The proposed operation is consistent with applicable zoning ordinances (ref. Alan Toney, City Planner, City of Shelby, May 9, 2019).
- A permit fee of \$970.00 is required for this application and was included.
- According to the application, Clearwater has determined that no chemicals are stored in a quantity above the 112r triggering threshold and thus is not subject to 112r requirements.
- The application was signed by Mr. James Jordan, Plant Manager on May 2, 2019

VII. Recommendations

The Part II application for Clearwater Paper Corporation – Shelby Converting Plant, Cleveland County, NC has been reviewed by DAQ to determine compliance with all procedures and requirements. DAQ has determined that this facility is complying or will achieve compliance, as specified in the permit, with all requirements that are applicable to the affected sources. Following the Public Notice and EPA review periods, DAQ will make a recommendation on the Permit. DAQ recommends XXXX of Air Permit No. 10139T07.

ATTACHMENT I - Permit Review for Part I of the Significant Modification

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Application Review

Issue Date: April 18, 2017

Region: Mooresville Regional Office
County: Cleveland
NC Facility ID: 2300377
Inspector's Name: Carlotta Adams
Date of Last Inspection: 08/16/2016
Compliance Code: 3 / Compliance - inspection

Facility Data				Permit Applicability (this application only)			
Applicant (Facility's Name): Clearwater Paper Corporation - Shelby Converting Plant Facility Address: Clearwater Paper Corporation - Shelby Converting Plant 671 Washburn Switch Road Shelby, NC 28150 SIC: 2611 / Pulp Mills NAICS: 32211 / Pulp Mills Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V				SIP: 2D .0503, .0515, .0516, .0521, .1806 NSPS: Subpart Dc NESHAP: N/A PSD: N/A PSD Avoidance: N/A NC Toxics: 2D .1100 112(r): N/A Other: N/A			
Contact Data				Application Data			
Facility Contact James Jordan Plant Manager (704) 476-3802 671 Washburn Switch Road Shelby, NC 28150	Authorized Contact James Jordan Plant Manager (704) 476-3802 671 Washburn Switch Road Shelby, NC 28150	Technical Contact Ted White Senior Engineer (919) 812-0461 304-A West Millbrook Road Raleigh, NC 27609	Application Number: 2300377.17A Date Received: 02/16/2017 Application Type: Modification Application Schedule: TV-Significant Existing Permit Data Existing Permit Number: 10139/T05 Existing Permit Issue Date: 08/26/2016 Existing Permit Expiration Date: 07/31/2021				
Total Actual emissions in TONS/YEAR:							
CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2015	0.3000	28.29	27.19	152.88	216.15	8.09	6.70* [Methanol (methyl alcohol)]
2014	0.3200	29.10	24.33	156.66	218.57	4.35	2.50* [Methanol (methyl alcohol)]
2013	0.3000	28.61	11.91	155.01	216.80	1.25	1.16 [Methanol (methyl alcohol)]
2012	0.0241	1.75	0.6592	10.61	50.97	0.0232	0.0176 [Acetaldehyde]
*Methanol emissions were based on the incorrect percentage of methanol in an adhesive used in the converting operations. Instead of containing 1.5 percent methanol by weight, the maximum methanol present is only 0.11 percent by weight.							
Review Engineer: Jenny Kelvington Review Engineer's Signature: _____ Date: _____				Comments / Recommendations: Issue: 10139/T06 Permit Issue Date: April 18, 2017 Permit Expiration Date: July 31, 2021			

1. Purpose of Application

This application is for the first part of a two-part significant modification of the current Title V permit to add a second tissue manufacturing and converting plant at the Clearwater Paper - Shelby, N.C. location. The proposed expansion is expected to cost \$330 million and add 180 new jobs over the next two years.¹ It should be noted that Clearwater submitted both an application for the public file and a confidential application for internal use only. The confidential version contains information that Clearwater considers to be trade secrets and will be kept in the confidential files in the Raleigh Central Office.

2. Facility Description

Clearwater Paper operates a paper manufacturing facility in Shelby, N.C. that produces bulk paper rolls and converts them into finished consumer bath tissue, paper towel and napkin paper products made for various store labels. It receives softwood-, hardwood- and eucalyptus-derived paper pulp referred to as furnish that is typically discarded bleached printing, writing, and wood containing papers - via rail and truck shipments. The origin of the pulp determines the final paper qualities - softwood provides strength, hardwood enhances softness and eucalyptus improves fluffiness.

The papermaking process involves preparing pulp fibers, dewatering, pressing, drying and finishing. Pulpers convert batches of furnish into slurries of well separated fibers. Polyvinyl alcohol is added to the fibers to improve the papermaking characteristics. The paper machine forms wet paper by pressing the pulp slurry between two rotating fabric belts that travel over vacuum slots to remove water and dries the paper through two natural gas direct-fired through-air-dryers [TAD] and a steam heated pressured dryer. Four parallel control devices – each with a separate emissions release point – control particulate emissions. The wastewater is collected, sent to a dissolved air floatation clarifier, and discharged to a publically owned treatment plant. At the converting facility, parent paper rolls are loaded and fed into a winding machine. The papers are embossed and fluffed as needed, placed on rolls and cut as appropriate. All product lines require the use of small amounts of glue and date coding inks, which emit small quantities of volatile organic compounds (VOCs), hazardous air pollutants (HAPs), and North Carolina toxic air pollutants (TAPs).

3. History/Background/Application Chronology

Feb. 14, 2012	Air Permit No. 10139R01 issued for the addition of a paper machine, two natural gas direct-fired through air dryer burners, a pulper, a natural gas-fired, and a natural gas-fired emergency generator. With the modification, the fee class changes from small to Title V.
Jun. 28, 2013	Air Permit No. 10139R02 issued for the addition of napkin line 1.
Sep. 20, 2013	Air Permit No. 10139R03 issued for the addition of household towel line 5 to produce paper towels and tissue.
Jun. 13, 2014	Air Permit No. 10139R04 issued for the addition of bath/towel line 6 to produce bath and towel tissue.
Aug. 26, 2016	Air Permit No. 10139T05 was issued as a first-time Title V permit and with the addition of the PVOH Make-down system No. 1 and the change in responsible official.
Feb. 16, 2017	Permit application No. 2300377.17A was received for state-only 501(c)(2) modification to add a second paper making facility and a second converting plant.

¹ Katherine Peralta, Charlotte Observer, Feb. 9, 2017, “Tissue manufacturer to hire 180 as it expands Shelby facility.”

Mar. 8, 2017 DAQ requested and received the modeling analysis supporting the toxic air pollutant emission rates in the application. DAQ also sent an information requests pertaining to the PM₁₀/PM_{2.5} emissions from the paper machines and facility-wide methanol emissions.

Mar. 28, 2017 DAQ received all information requested from Clearwater Paper.

4. Statement of Compliance

Ms. Carlotta Adams, Mooresville Regional Office (MRO) inspected Clearwater Paper on Aug. 16, 2016 and concluded that the facility was in compliance with state and federal air quality requirements during the time of inspection. In addition, the responsible official, Mr. James Jordan has signed Form E5 certifying the facility is in compliance with all applicable requirements.

5. Permit Modifications

The following table describes the changes to the current permit as requested by the application.

Pages	Section	Description of Changes
-	Cover letter	Noted that the modification will result in an increase in 9.9 pounds per hour of NO _x , 4.8 pounds per hour of PM ₁₀ , and 0.16 pounds per hour of SO ₂ .
-	Attachment I to the Cover Letter	<p>Add the following emissions sources to the list of activities considered insignificant according to 15A NCAC 02Q .0503(8):</p> <ul style="list-style-type: none"> Natural gas-fired emergency generator No. 2B (ID No. IS-CPDEG02B) Diesel-fired fire pump engine No. 2 (ID No. IS-CPDFP02) Pulper No. 2 (ID No. IS-CPDPULP04) Virgin Pulper No. 3 (ID No. IS-CPDPULP05) Virgin Pulper No. 4 (ID No. IS-CPDPULP06) Cooling tower No. 2 (ID No. IS-CPDCT2) Two process tanks (ID No. IS-CPD2PT2) Two diesel tanks (ID No. IS-CPDDT2) Two propane tanks and filling operations (ID No. IS-CPDPTF2) Four dry filter dust suction systems (ID No. IS-CPD4DFDSS1) Four dry filter dust suction systems (ID No. IS-CPD4DFDSS2)
6 to 8	Section 2.1 A	<p>Added the following emissions sources and control devices as being subject to the requirements in this section:</p> <ul style="list-style-type: none"> Paper Machine No. 2 (ID No. CPDPM02 and associated control devices including Former Mist Exhaust Separator (ID No. CPDFORMERMES02), TAD Mist Exhaust Separator (ID No. CPDTADMISTMES02), Spray Boom Mist Exhaust Separator (ID No. CPDSPRAYMES02) and Dust Venturi Scrubber-Separator (ID No. CPDDUSTVSS02) Paper Machine No. 2 TAD 3 Burners and TAD 4 Burners (ID Nos. CPDTAD03 and CPDTAD04) PVOH Make-down system No. 2 (ID No. CPDS29) <p>Added the wastewater treatment system No. 2 (ID No. CPDWW02) to this section as a fugitive source of VOCs with no applicable requirements.</p>

Pages	Section	Description of Changes
8,9	Section 2.1 B	Added natural gas-fired boiler No. 2 (ID No. CPDBOIL02) as an emission source being subject to the requirements of this section and specified a particulate emissions limit of 0.29 pounds per million Btu heat input for this boiler as per 02D .0503.
10	Section 2.1 C	Added four converting lines BHT1-4 (ID No. CPDS21) and offline printer No. 2 (ID No. CPDS06) as emissions source being subject to the requirements of this section.
10 to 13	Section 2.2 A.2	Updated the State-enforceable only emission limitations for each emission source for the eight toxic air pollutants (TAPs) that may be emitted in excess of the TPER to reflect the modeling analysis approved by DAQ Air Quality Analysis Branch on March 27, 2017.
14	Section 2.2 B	Added a requirement that the Permittee notify DEQ within 15 days and file a permit application filing within 12 months of beginning operation of emission sources (ID Nos. CPDBOIL02, CPDPM02, CPDS21, CPDS26, CPDS29, CPDTAD03, CPDTAD04 and CPDWW02) and associated control devices (ID Nos. CPDFORMERMES, CPDTADMISTMES, CPDSPRAYMES, and CPDDUSTVSS).
24	ATTACHMENT	Added the following to the list of acronyms: <ul style="list-style-type: none"> • PM1 – paper machine No. 1 • PM2 – paper machine No. 2 • TAD – through-air-dryer

Facility Expansion

Clearwater Paper seeks a permit to construct and operate new emission sources and control devices which will essentially double the production capacity at its facility in Shelby, North Carolina. The increase in potential emissions resulting from this expansion will not affect its hazardous air pollutant (HAP) area source status but will reclassify the site as a PSD major source for future modifications. While the facility is not a Kraft pulp mill or one of the other listed categories under PSD, it will become a PSD major source because potential emissions of at least one regulated new source review pollutant after the modification exceeds the 250 tons per consecutive 12-month major source threshold as shown in the table below.

	Facility-Wide Emission (tons per year)		
	Potential Emissions (after controls or limitations)		2015 Actual Emissions
	Before modification	After modification	
Carbon Monoxide (CO)	173.2	345.2	153
Volatile Organic Compounds (VOC)	210.6	426.1	27.2

The expansion project includes the addition of several sources of the same size and capacity as currently in service equipment including a polyvinyl alcohol make-down system, a paper machine and associated control devices, an emergency generator and a fire water pump. It also adds pulpers, a natural gas-fired boiler larger in size than the existing boiler, and a converting area with four lines and an off-line printer. Because potential emissions from Emergency Generator No. 2B and Fire Water Pump No. 2 are below the limits established in 15A NCAC 02Q .0503(8), they are on list of insignificant activities.

6. Regulatory Review

Clearwater Paper's current permitted equipment is subject to the following regulations:

15A NCAC 02D .0503, Particulates from Fuel Burning Indirect Heat Exchangers
15A NCAC 02D .0515, Particulates from Miscellaneous Industrial Processes
15A NCAC 02D .0516, Sulfur Dioxide Emissions from Combustion Sources
15A NCAC 02D .0521, Control of Visible Emissions
15A NCAC 02D .0524, New Source Performance Standards, 40 CFR 60 Dc
15A NCAC 02D .0958, Work Practices for Sources of VOC
15A NCAC 02D .1100, Control of Toxic Air Pollutants
15A NCAC 02D .1806, Control and Prohibition of Odorous Emissions
15A NCAC 02Q .0711, Emission Rates Requiring a Permit

Effective November 1, 2016, 15A NCAC 02D .0958 applies only in the former ozone nonattainment areas. Because Cleveland County has never been classified as nonattainment, this condition will be removed from the permit as requested by the facility to reflect the amended 15A NCAC 02D .0902 applicability rule.

The emission sources associated with the facility expansion will be subject to the same regulations as the existing facility as described below.

15A NCAC 02D .0503, Particulates from Fuel Burning Indirect Heat Exchangers

The Clearwater Paper expansion project adds one fuel burning indirect heat exchanger - natural gas-fired boiler No. 2 (ID No. ES-CPDBOIL02) rated at 98 million Btu/hour. Particulate emissions from fuel burning indirect heat exchangers are limited by the following equation:

$$E = 1.09Q^{-0.2594}$$

where **E** is the allowable particulate emissions rate in pounds per million Btu and **Q** is the total maximum heat input in million Btu's of all fuel burning indirect heat exchangers exhausted through a stack or stacks at the site. Only one fuel burning indirect heat exchanger - natural gas-fired boiler No. 1 (ID No. ES-CPDBOIL01) rated at 77.6 million Btu/hour – is currently at the existing facility.

Thus, $Q = 98.0 + 77.6 = 175.6$ million Btu/hour (MMBtu); and

$$E = 1.09Q^{-0.2594} = 1.09(175.6)^{-0.2594} = 0.29 \text{ pounds/MMBtu}$$

According to AP-42, Table 1.4-2 (rev. 07/98), 7.6 pounds of total particulate matter (PM) are emitted per million cubic feet during natural gas combustion. The U.S. Energy Information Administration reports that in 2015 the average heat content of natural gas for the residential, commercial, and industrial sectors was about 1,032 Btu per cubic foot. Thus, using the AP-42 emission factor, total PM emissions from boiler No. 2 are expected to be:

$$(7.6 \text{ pounds/million feet}^3) (1 \text{ million feet}^3/1,032 \text{ MMBtu}) = 0.0074 \text{ pounds/MMBtu}$$

Compliance is clearly demonstrated with this regulation as expected PM emissions from boiler No. 2 are less than 3 percent of the allowable emission rate.

15A NCAC 02D .0515, Particulates from Miscellaneous Industrial Processes² – Paper Machine No. 2 (ID No. CPDPM02) and its two direct-fired TAD units will be subject to 02D .0515. This regulation limits particulate emissions from any stack, vent, or outlet, resulting from any industrial process, for which no other emission control standard is applicable, in proportion to the process rate using the following equation.

$$E = 4.10 \times P^{0.67}$$

Where: E = allowable emission rate in pounds per hour (lbs/hr) and P = process rate in tons per hour (tons/hr).

The table below shows the process rate, allowable PM emission rate and potential pre-control and post-control filterable PM emissions rate for the Paper Machine No. 2 (ID No. CPDPM02).

Process Rate (tons/hr)	Particulate Matter Emission Rate (lbs/hour)			Control Efficiency ^b	Compliance Demonstrated?
	Allowable	Potential Before Controls ^a	Potential After Controls		
14	24.0	14.6	4.7	68%	Yes

- Emissions have been calculated using the median of the condensible particulate matter emission factors for high flow tissue machines listed in Table 8.4 of National Council for Air and Stream Improvement (NCASI) Technical Bulletin No. 1020, March 2013 Update and median of the filterable particulate matter emission factors for high flow tissue machines listed in Table 8.4 of NCASI Technical Bulletin No. 1020, December 2012 Update and include burner emissions.
- The paper machine is controlled by four parallel control devices- Former Mist Exhaust Separator No. 2, TAD Mist Exhaust Separator No. 2, Spray Boom Mist Exhaust Separator No. 2, and Dust Venturi Scrubber Separator No. 2. The paper machine former and two through air dryers (TADs) are each controlled by cyclonic mist droplet separators which are expected to reduce total particulate matter by 67%, PM10 by 37% and PM2.5 by 20%. Particulate emissions from the steam heated pressurized dryer portion of the paper machine are controlled by an inline venturi scrubber and cyclonic mist separator. The applicant estimates that this control system will reduce total PM by 96 percent, PM10 by 91 percent and PM2.5 by 90 percent.

The potential uncontrolled emissions from the paper machine and its TAD units are less than the allowable emission rate. Thus, compliance is demonstrated.

15A NCAC 02D .0516, Sulfur Dioxide Emissions from Combustion Sources - Natural gas-fired boiler No. 2 (ID No. CPDBOIL02) and natural gas-fired TAD burners Nos. 3 and 4 (ID Nos. CPDTAD03 and CPDTAD04) are combustion sources that discharge through a vent, stack, or chimney, making them subject to 02D .0516. This regulation limits the emissions of sulfur dioxide (SO₂) to no more than 2.3 pounds of SO₂ per million Btu heat input. AP-42 Table 1.4-2 (rev. 07/98) estimates SO₂ emissions from natural gas direct-fired sources to be 0.6 pounds per million cubic feet, which equates to 0.00058 pounds per million Btu. SO₂ forms when the sulfur contained in the fuel source is oxidized during combustion. Because the sulfur content of natural gas is inherently low, compliance with this rule is certain for each combustion source.

15A NCAC 02D .0521, Control of Visible Emissions - All fuel burning sources and other sources that may have visible emissions are subject to this regulation, provided that the source is not subject to a visible emission standard in 02D .0506, .0508, .0524, .0543, .0544, .1110, .1111, .1205, .1206, .1210, or .1211. Visible emissions from the natural gas-fired TAD burners No. 3 and No. 4 (ID Nos. CPDTAD03 and CPDTAD04), the natural gas-fired boiler No. 2 (ID No. CPDBOIL02) and the paper machine No. 2 (ID No. CPDPM02) – all of which are manufactured after July 1, 1971 – will be limited to no more than 20 percent opacity when averaged over a six-minute period, except as specified in 15A NCAC 02D .0521(d) by this regulation.

The combustion of natural gas has inherently low visible emissions. Thus, no monitoring, recordkeeping, or reporting is required for the three added natural gas-fired emission sources. Compliance with the 20 percent capacity limit is also expected for the paper machine No. 2 (ID No. CPDPM02). During the most recent facility inspection that took place on August 16, 2016, Ms. Carlotta Adams, MRO observed paper machine No. 1 in operation without any visible emissions. Because paper machine No. 2 will be identical to the existing unit, it is also expected to operate with little to no visible emissions. Thus, no monitoring, recordkeeping, or reporting will be required to demonstrate compliance with 02D .0521. Compliance is expected.

15A NCAC 02D .0524, New Source Performance Standards (NSPS) - The natural gas-fired boiler No. 2 is designed with a maximum firing rate of 98 million Btu/hour and will be equipped with low-NOx burners. NSPS 40 CFR Part 60, Subpart Dc applies because the boiler is a steam generating unit with a maximum heat input between 10 to 100 million Btu/hour for which construction will commence after June 9, 1989. This regulation does not specify an emission limit for natural gas-fired sources but requires written notification of the initial boiler startup within 15 days of such date, monthly fuel consumption records and semiannual reporting of fuel usage. All required records must be maintained on site for two years. Compliance is anticipated and has been demonstrated for the identical existing boiler No. 1.

15A NCAC 02D .1100, Control of Toxic Air Pollutants and 15A NCAC 02Q .0711, Emission Rates Requiring a Permit – Compliance with the state-enforceable only toxic air pollutant standards is discussed in Section 8 of this permit review.

15A NCAC 02D .1806, Control and Prohibition of Odorous Emissions - This regulation is a state-enforceable only requirement that applies to operations that may produce odorous emissions causing or contributing to objectionable odors beyond the facility's boundaries. The facility has consistently complied with the odor rule as documented in the reports of the five most recent compliance inspections conducted between 2012 and 2016. Additionally, no odor complaints have been received by DEQ regarding this facility. Because the modification is an expansion of existing site operations, compliance is expected.

7. NSPS, NESHAP/MACT, NSR/PSD, 112(r), CAM

NSPS

The Permittee is subject to the following New Source Performance Standards for existing and new emission sources:

1. NSPS Subpart Dc – Natural gas-fired boilers Nos. 1 and 2. See Section 6.
2. NSPS Subpart JJJJ – Natural gas-fired emergency generator Nos. 1 and 2
3. NSPS Subpart IIII – Diesel-fired fire water pump engine Nos. 1 and 2

Natural gas-fired emergency generators

40 CFR Part 60, Subpart JJJJ "Standards of Performance for Stationary Spark Ignition Internal Combustion Engines," applies to existing natural gas-fired emergency generator No. 1 (ID No. IS-CPDEG021) and the new natural gas-fired emergency generator No. 2 (IS-CPDEG02) because their construction commencement dates are after June 12, 2006. NSPS Subpart JJJJ establishes the following emissions limits for emergency stationary spark ignition (SI) internal combustion engines (ICE) with a maximum engine power greater than 19 kW and manufactured on or after January 1, 2009:

Pollutant	Emission Limit (g/HP-hr)
Nitrogen oxides (NOx) + hydrocarbon (HC)	10
Carbon Monoxide (CO)	387

In addition, NSPS Subpart JJJJ requires the owner/operator to maintain records of notifications submitted and required maintenance and if applicable, keep documentation that the engine has been certified by the manufacturer to comply with the emission standards. Clearwater Paper has consistently met the applicable NSPS Subpart JJJJ requirements for the existing generator and thus compliance is expected for the new generator.

Diesel-fired fire pump engine

40 CFR Part 60, Subpart IIII “Standards of Performance for Stationary Compression Ignition Internal Combustion Engines,” applies to existing diesel-fired fire pump engine No. 1 (ID No. IS-CPDFP01) and the new diesel-fired fire pump engine No. 2 (ID No. IS-CPDFP02) because the engines were manufactured after July 1, 2006. The manufacturer has certified that fire pump engine No. 1 meets the following emission standards:

Pollutant	Emission Limit (g/kW-hr)
NOx + HC	4.0
PM	0.20

A similar certification is required for fire pump engine No. 2. Additionally, the facility will be required to install a non-resettable hour meter on the fire pump engine No. 2 and limit the sulfur content of the fuel burned in the engine to 15 parts per million as it has done for fire pump engine No. 1. Clearwater Paper has consistently met the applicable NSPS Subpart IIII requirements for the existing engine and continued compliance is expected.

NESHAP/MACT

Following the modification, the applicant estimates that the most prevalent HAP - methanol – will have a facility-wide maximum emission rate of 4.8 tons per year and total HAPs will have a facility-wide maximum emission rate of 7.3 tons per year. Note that for its 2014 and 2015 emissions inventories, Clearwater Paper calculated methanol emissions from the Shelby site to be significantly higher than they actually were based on an incorrect percentage of methanol in an adhesive it uses. The adhesive contains only 0.11 percent methanol by weight instead of the 1.5 percent methanol by weight percentage used in the annual emissions calculation. Because potential emissions are less than the 10 tons per consecutive 12-month period single HAP threshold and the 25 tons per consecutive 12-month period total HAP threshold, the facility will remain a minor source of HAPs. Therefore, the facility will not be subject to any **15A NCAC 02D .1111** “Maximum Achievable Control Technology” [MACT] standards applicable to major sources under the National Emission Standards for Hazardous Air Pollutants (NESHAP) in CFR Part 63. However, one NESHAP for areas HAP sources will continue to apply.

MACT Subpart ZZZZ

“NESHAP for Stationary Reciprocating Internal Combustion Engines, 40 CFR Part 63,” Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from the stationary RICE located at area sources of HAP emissions. Based on the facility’s potential to emit,

this facility is not a major source of HAPs. MACT Subpart ZZZZ already applies to the facility's existing fire pump engine and emergency generator and is also applicable to the fire pump engine and emergency generator that will be added. As per 40 CFR Part 63.6590(c), an affected source that meets the requirements of NSPS Subpart IIII for compression ignition engines or NSPS Subpart JJJJ for spark ignition engines meets the requirements of MACT Subpart ZZZZ. Compliance is expected.

GACT Subpart JJJJJ

40 CFR 63.11195(e) excludes natural gas-fired boilers from the NESHAP requirements for applicable to industrial, commercial, and institutional boilers and process heaters at area sources in 40 CFR 63 Subpart JJJJJ, or GACT 6J. Thus, the existing and proposed natural gas-fired boilers are not subject to GACT 6J.

New Source Review (NSR)/Prevention of Significant Deterioration (PSD)/Increment Tracking

This facility is currently a PSD minor source but becomes a PSD major source upon the construction and operation of the second paper machine as requested by this permit modification. The facility is located in Cleveland County, which is in attainment with all national ambient air quality standards (NAAQS) and not part of the Charlotte-Gastonia-Rock Hill, NC-SC; 1997 Ozone Attainment/ Maintenance area. In the late 1970's, the PSD minor source base line dates for PM10 and sulfur dioxide (SO2) emissions were triggered in the county by PPG and then in 2008, Cleveland Co. Generating Facility triggered the PSD minor source baseline date for nitrogen oxides (NOx). This modification will result in an increase in 9.8 pounds per hour of NOx, 4.1 pounds per hour of PM10, and 0.16 pounds per hour of SO2.

112(r)

Per Form A3 entitled "112(r) Applicability Information", the facility is not subject to 40 CFR Part 68 "Prevention of Accidental Releases" – Section 112(r) of the Federal Clean Air Act. The facility is not subject to this rule because it does not store one or more of the regulated substances in quantities above the thresholds in the Rule. This permit modification does not affect the status with respect to 112(r).

CAM

The CAM rule (40 CFR 64) applies to each pollutant specific emissions unit (PSEU) at major TV facilities that meets all of the following criteria:

1. Is subject to an emission limitation or standard, and
2. Uses a control device to achieve compliance, and
3. Has potential pre-control emissions that exceed or are equivalent to the major source threshold.

The paper machines are subject to 02D .0515, and each are vented to parallel mist exhaust separators and venturi scrubbers to control particulate emissions. However, in all instances, the pre-controlled PM10 and PM2.5 emissions are less than 100 tons per year – the major source threshold as shown in the table below.

Emission Source ID Nos.	Pre-controlled PM10 Emissions	Control Device ID Nos.	Comments
CPDPM01	26.3 tons per year	CPDFORMERMES	Emission rate is based on NCASI Technical Bulletin 1020.
		CPDTADMISTMES	
		CPDSPRAYMES	
		CPDDUSTVSS	
CPDPM02	26.3 tons per year	CPDFORMERMES2	Emission rate is based on NCASI Technical Bulletin 1020.
		CPDTADMISTMES2	
		CPDSPRAYMES2	

Emission Source ID Nos.	Pre-controlled PM10 Emissions	Control Device ID Nos.	Comments
		CPDDUSTVSS2	

8. Facility Wide Air Toxics

The facility is subject to 02Q .0711 and 02D .1100. The applicant has performed modeling using AERMOD, Version 16216 to demonstrate compliance with the acceptable ambient levels (AALs) for all four toxic air pollutants (TAPs) with potential emissions above the TPERs in 02Q .0711 and for four other TAPs to provide process flexibility. Each pollutant was modeled at least three times higher than its expected maximum emission rate. TAPs emitted only from combustion sources were each below the TPER and thus not modeled. The Air Quality Analysis Branch (AQAB) received the AERMOD analysis on March 8, 2017, and determined that it demonstrates compliance on a facility-wide basis for all TAP modeled. TAP emissions will result in maximum ambient concentrations less than the AALs as summarized below.

Toxic Air Pollutant	Exceeds TPER?	Facility-Wide Potential Emissions	Sum of All Modeled Rates	Averaging Period	AAL (micro-g/m ³)	Modeled % of AAL
Acetaldehyde	No	0.053 lb/hr	255 lb/hr	1-hour	27,000	95%
Ammonia	Yes	10.7 lb/hr	497 lb/hr	1-hour	2,700	94%
Benzene	Yes	172 lb/yr	518 lb/yr	Annual	0.120	92%
1,4-Dioxane	No	0.75 lb/day	739 lb/day	24-hour	560	95%
Ethylene oxide	Yes	342 lb/yr	1540 lb/yr	Annual	0.027	96%
Formaldehyde	Yes	0.095 lb/hr	2.5 lb/hr	1-hour	150	94%
Toluene	No	0.2 lb/hr	804 lb/hr	1-hour	56,000	47%
	No	4.74 lb/day	19,400 lb/day	24-hour	4,700	91%
Xylene	No	0.12 lb/hr	230 lb/hr	1-hour	65,000	23%
	No	2.9 lb /day	5,520 lb /day	24-hour	2,700	94%

The TAP emission limit table in permit condition 2.2.A.2 has been updated as follows to reflect the modeled emission rates and the new TAP emission sources.

Affected Source(s)	Toxic Air Pollutant	CAS No.	Emission Limit(s) (lbs/hour)
Pulper (used for broke) (ID No. IS-CPDPULP01) Virgin Pulper No. 1 (ID No. IS-CPDPULP02) Virgin Pulper No. 2 (ID No. IS-CPDPULP03)	Toluene	108-88-3	334
PM1 TAD 1 Burners (CPDTAD01)	Ammonia	7664-41-7	20.3
	Benzene	71-43-2	5.80x10 ⁻⁴
	Ethylene Oxide	75-21-8	7.31x10 ⁻³
	Formaldehyde	50-00-0	0.346
	Toluene	108-88-3	1.45
	Xylene (mixed isomers)	1330-20-7	3.40

Affected Source(s)	Toxic Air Pollutant	CAS No.	Emission Limit(s) (lbs/hour)
PM1 TAD 2 Burners (CPDTAD02)	Ammonia Benzene Ethylene Oxide Formaldehyde Toluene Xylene (mixed isomers)	7664-41-7 71-43-2 75-21-8 50-00-0 108-88-3 1330-20-7	20.3 3.05×10^{-4} 7.31×10^{-3} 0.181 0.758 3.40
PM1 (ID No. CPDPM01) Vacuum (CPDVACS01)	Ammonia Benzene Ethylene Oxide Xylene (mixed isomers)	7664-41-7 71-43-2 75-21-8 1330-20-7	91.5 1.17×10^{-5} 3.29×10^{-2} 15.3
PM1 (ID No. CPDPM01) Former Mist (CPDFORMERS01)	Ammonia Benzene Ethylene Oxide Xylene (mixed isomers)	7664-41-7 71-43-2 75-21-8 1330-20-7	91.5 1.17×10^{-5} 3.29×10^{-2} 15.3
PM1 (ID No. CPDPM01) TAD Mist (CPDTADS01)	Ammonia Benzene Ethylene Oxide Xylene (mixed isomers)	7664-41-7 71-43-2 75-21-8 1330-20-7	20.3 2.59×10^{-6} 7.31×10^{-3} 3.40
Converting Building No. 1 Fugitives (ID No. CONVERT)	Acetaldehyde Ammonia Benzene 1,4-Dioxane Ethylene Oxide Formaldehyde Toluene Xylene (mixed isomers)	75-07-0 7664-41-7 71-43-2 123-91-1 75-21-8 50-00-0 108-88-3 1330-20-7	128 4.30 2.48×10^{-2} 15.4 2.87×10^{-5} 0.703 65.3 74.0
Boiler No. 1 (ID No. CPDBOIL01)	Benzene Formaldehyde Toluene	71-43-2 50-00-0 108-88-3	1.59×10^{-4} 5.66×10^{-3} 2.57×10^{-4}
Emergency Generator No. 1 (ID No. IS-CPDEG01)	Acetaldehyde Benzene Formaldehyde Toluene Xylene (mixed isomers)	75-07-0 71-43-2 50-00-0 108-88-3 1330-20-7	1.82×10^{-3} 1.03×10^{-3} 1.33×10^{-2} 3.63×10^{-4} 1.27×10^{-4}
Fire Water Pump No. 1 (ID No. IS-CPDFP01)	Acetaldehyde Benzene Formaldehyde Toluene Xylene (mixed isomers)	75-07-0 71-43-2 50-00-0 108-88-3 1330-20-7	8.60×10^{-5} 2.70×10^{-3} 2.70×10^{-4} 9.60×10^{-4} 6.60×10^{-4}
Pulper No. 2 (used for broke) (ID No. IS-CPDPULP04) Virgin Pulper No. 3 (ID No. IS-CPDPULP05) Virgin Pulper No. 4 (ID No. IS-CPDPULP06)	Toluene	108-88-3	334

Affected Source(s)	Toxic Air Pollutant	CAS No.	Emission Limit(s) (lbs/hour)
PM2 TAD 3 Burners (CPDTAD03)	Ammonia	7664-41-7	20.3
	Benzene	71-43-2	5.80×10^{-4}
	Ethylene Oxide	75-21-8	7.31×10^{-3}
	Formaldehyde	50-00-0	0.346
	Toluene	108-88-3	1.45
	Xylene (mixed isomers)	1330-20-7	3.40
PM2 TAD 4 Burners (CPDTAD04)	Ammonia	7664-41-7	20.3
	Benzene	71-43-2	3.05×10^{-4}
	Ethylene Oxide	75-21-8	7.31×10^{-3}
	Formaldehyde	50-00-0	0.181
	Toluene	108-88-3	0.758
	Xylene (mixed isomers)	1330-20-7	3.40
PM2 (ID No. CPDPM02) Vacuum (CPDVAC2S01)	Ammonia	7664-41-7	91.5
	Benzene	71-43-2	1.17×10^{-5}
	Ethylene Oxide	75-21-8	3.29×10^{-2}
	Xylene (mixed isomers)	1330-20-7	15.3
PM2 (ID No. CPDPM02) Former Mist (CPDFORMER2S01)	Ammonia	7664-41-7	91.5
	Benzene	71-43-2	1.17×10^{-5}
	Ethylene Oxide	75-21-8	3.29×10^{-2}
	Xylene (mixed isomers)	1330-20-7	15.3
PM2 (ID No. CPDPM02) TAD Mist (CPDTAD2S01)	Ammonia	7664-41-7	20.3
	Benzene	71-43-2	2.59×10^{-5}
	Ethylene Oxide	75-21-8	7.31×10^{-3}
	Xylene (mixed isomers)	1330-20-7	3.40
Converting Building No. 2 Fugitives (ID No. CPDS21)	Acetaldehyde	75-07-0	128
	Ammonia	7664-41-7	4.30
	Benzene	71-43-2	2.48×10^{-2}
	1,4-Dioxane	123-91-1	15.4
	Ethylene Oxide	75-21-8	2.87×10^{-5}
	Formaldehyde	50-00-0	0.703
	Toluene	108-88-3	65.3
	Xylene (mixed isomers)	1330-20-7	74.0
Boiler No. 2 (ID No. CPDBOIL02)	Benzene	71-43-2	2.02×10^{-4}
	Formaldehyde	50-00-0	7.21×10^{-3}
	Toluene	108-88-3	3.27×10^{-4}
Emergency Generator No. 2B (ID No. IS-CPDEG02B)	Acetaldehyde	75-07-0	1.82×10^{-3}
	Benzene	71-43-2	1.03×10^{-3}
	Formaldehyde	50-00-0	1.33×10^{-2}
	Toluene	108-88-3	3.63×10^{-4}
	Xylene (mixed isomers)	1330-20-7	1.27×10^{-4}
Fire Water Pump No. 2 (ID No. IS-CPDFP02)	Acetaldehyde	75-07-0	8.64×10^{-5}
	Benzene	71-43-2	2.66×10^{-3}
	Formaldehyde	50-00-0	2.71×10^{-4}
	Toluene	108-88-3	9.64×10^{-4}
	Xylene (mixed isomers)	1330-20-7	6.62×10^{-4}

9. Facility Emissions Review

The potential facility-wide emissions following the modification were provided by the applicant on Form D1, Facility-Wide Emissions Summary and are shown in the table below.

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION - FACILITY-WIDE (Tons per Year)			
AIR POLLUTANT EMITTED	POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITATIONS)	POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITATIONS)	EXPECTED ACTUAL EMISSIONS (AFTER CONTROLS / LIMITATIONS)
PARTICULATE MATTER (PM)	158.4	50.9	50.9
PARTICULATE MATTER < 10 MICRONS (PM10)	85.5	41.8	41.8
PARTICULATE MATTER < 2.5 MICRONS (PM2.5)	58.9	39.4	39.4
SULFUR DIOXIDE (SO2)	1.2	1.2	1.2
NITROGEN OXIDES (NOx)	78.1	78.1	78.1
CARBON MONOXIDE (CO)	345.2	345.2	345.2
VOLATILE ORGANIC COMPOUNDS (VOC)	426.2	426.2	426.2
LEAD	-	-	-
CH4	4.5	4.5	4.5
N2O	5.5	5.5	5.5
CO2	231,931	231,931	231,931
CO2 Equivalent (CO2e)	233,702	233,702	233,702
OTHER	N/A	N/A	N/A

HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION - FACILITY-WIDE (Tons per Year)				
HAZARDOUS AIR POLLUTANT EMITTED	CAS NO.	POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITATIONS)	POTENTIAL EMISSIONS Z0 CONTROLS / LIMITATIONS)	EXPECTED ACTUAL EMISSIONS (AFTER CONTROLS / LIMITATIONS)
1,1,2,2-Tetrachloroethane	79-34-5	1.6E-06	1.6E-06	1.6E-06
1,3-Butadiene	106-99-0	4.3E-05	4.3E-05	4.3E-05
1,3-Dichloro-2-Propanol	96-23-1	5.0E-05	5.0E-05	5.0E-05
Acrolein	107-02-8	1.7E-04	1.7E-04	1.7E-04
Ethylbenzene	100-41-4	8.1E-02	8.1E-02	8.1E-02
Methanol	67-56-1	4.8E+00	4.8E+00	4.8E+00
Methylene Chloride	75-09-2	2.7E-06	2.7E-06	2.7E-06
Naphthalene	91-20-3	8.2E-06	8.2E-06	8.2E-06
Benzo(a)pyrene	50-32-8	9.2E-06	9.2E-06	9.2E-06
Styrene	100-42-5	7.7E-07	7.7E-07	7.7E-07
Xylene (mixed isomers)	1330-20-7	5.3E-01	5.3E-01	5.3E-01
Benzene	71-43-2	8.6E-02	8.6E-02	8.6E-02
Toluene	108-88-3	8.5E-01	8.5E-01	8.5E-01
Acetaldehyde	75-07-0	1.7E-01	1.7E-01	1.7E-01
Propylene oxide	75-56-9	1.4E-01	1.4E-01	1.4E-01
Ethylene Oxide	75-21-8	1.7E-01	1.7E-01	1.7E-01
1,4-Dioxane	123-91-1	1.4E-01	1.4E-01	1.4E-01
Formaldehyde	50-00-0	2.9E-01	2.9E-01	2.9E-01
	TOTAL:	7.26E+00	7.26E+00	7.26E+00

TOXIC AIR POLLUTANT EMISSIONS INFORMATION - FACILITY-WIDE

REQUESTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS.							
TAPS EMITTED [Note C]	CAS NO.	lb/hr	lb/day	lb/year	Modeling Required?		Modeled?
					Yes	No	No
1,1,2,2-Tetrachloroethane	79-34-5	0.00	0.00	0.0016		✓	No
1,3-Butadiene	106-99-0	0.00	0.02	0.09		✓	No
Acrolein	107-02-8	0.00	0.08	0.35		✓	No
Methylene Chloride	75-09-2	0.00	0.00	0.01		✓	No
Benzo(a)pyrene	50-32-8	0.00	0.00	0.02		✓	No
Styrene	100-42-5	0.00	0.00	0.0077		✓	No
Xylene (mixed isomers)	1330-20-7	0.12	2.9	1,055		✓	Yes
Benzene	71-43-2	0.03	0.65	172	✓		Yes
Toluene	108-88-3	0.20	4.71	1,708		✓	Yes
Ammonia	7664-41-7	0.45	10.7	93,295	✓		Yes
Acetaldehyde	75-07-0	10.7	256	434		✓	Yes
Ethylene Oxide	75-21-8	0.00	0.08	342	✓		Yes
1,4-Dioxane	123-91-1	0.00	0.08	275		✓	Yes
Formaldehyde	50-00-0	0.03	0.84	587	✓		Yes

COMMENTS: Maximum emissions of these NC TAPs are calculated based on the current selection of inks, adhesives, and other materials to be used in the plant's converting lines, pulpers, and paper machines, as well as on each unit's maximum anticipated production rate and fuel usage. To preserve flexibility in selecting alternative inks, adhesives, and other materials, Clearwater Paper requests that the air permit allow the maximum facility-wide emissions of each of these TAPs, up to its approved emission rate based on the modeling approved with this application No. 2300377.17A, while ensuring that the facility remains a non-major source of HAP emissions.

10. Public Notice/EPA and Affected State(s) Review

Public notice and EPA and affected state review is not required for the state modification part of a two-part significant permit modification. The public, the EPA, the state of South Carolina and the Mecklenburg County Local Program will have an opportunity to review and make comments on the draft permit when the second part of this two-step modification is processed.

11. Other Regulatory Considerations

- Mr. Ted S. White, P.E. License No. 016884 sealed the original application, pursuant to 15A NCAC 02Q .0112, on January 20, 2017 and the new forms submitted in request for information on March 28, 2017. A search of the registrant directory on the N.C. Board of Examiners for Engineers and Surveyors website confirmed that Mr. White is licensed to practice engineering in the state.
- The application includes two zoning consistency determinations – one signed by Walter Scharer, Planning Director for the City of Shelby and the other signed by Chris Martin, Senior Planner for Cleveland County. Both determinations conclude that the proposed operation is consistent with applicable zoning ordinances.

12. Comments and Recommendations

- Booker Pullen, DAQ Permit Engineering Supervisor reviewed the draft permit and review and provided comments on April 6, 2017. Mr. Pullen recommended the following changes: (1) correct all references to GACT Subpart ZZZZ to MACT Subpart ZZZZ, (2) add the word “total” in from of “heat input” for each applicable source, and (3) include in Section 2.2. of the permit a requirement that the Permittee file an amended application following the procedures of Section 15A NCAC 02Q .0500 within one year from the date of beginning operation of the new sources. The permit and review have been updated to incorporate these recommendations.

- Mr. James Jordan, the responsible official for Clearwater Paper, requested in an email dated April 17, 2017, that the application be processed as the first part of a two-step permit modification. In addition, he confirmed that the heat rates are correctly listed on the permit.
- The eight dry filter dust suction systems have been added to the list of insignificant activities as requested by the facility.
- Ms. Carlotta Adams, Mooresville Regional Office, reviewed the draft permit and requested no changes.

Attachment
Insignificant Emission Sources and Control Devices
Specific Limitations and Conditions

The following conditions apply to the four identified combustion sources which qualify as insignificant activities per 15A NCAC 02Q .0503(8) but are subject to NSPS and GACT requirements. These requirements apply as written and intended to serve as a guide to regional DEQ air quality inspectors.

A. Natural gas-fired emergency generator No. 1 (ID No. IS-CPDEG01), natural gas-fired emergency generator No. 2B (ID No. IS-CPDEG02B), diesel-fired fire pump engine (ID No. IS-CPDFP01), and diesel-fired fire pump engine (ID No. IS-CPDFP02)

The following table provides a summary of limits and standards for the insignificant emission sources described above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
NMHC + NO _x CO	10 g/HP-hr 387 g/HP-hr (ID No. IS-CPDEG01 and CPDEG02B only)	15A NCAC 02D .0524 40 CFR Part 60, Subpart JJJJ
NMHC + NO _x particulate emissions	4.0 g/kW-hr (3.0 g/HP-hr) 0.20 g/kW-hr (0.15 g/HP-hr) (ID Nos. IS-CPDFP01 and IS-CPDFP02 only)	15A NCAC 02D .0524 40 CFR Part 60, Subpart IIII
Hazardous air pollutants	<u>IS-CPDEG01 and IS-CPDEG02B:</u> Comply with NSPS Subpart JJJJ; <u>IS-CPDFP01 and IS-CPDFP02:</u> Comply with NSPS Subpart IIII;	15A NCAC 02D .1111 40 CFR Part 63, Subpart ZZZZ

1. 15A NCAC 02D .0524: NEW SOURCE PERFORMANCE STANDARDS

Applicability [15A NCAC 02Q .0508(f), 40 CFR 60.4230(a)(4)(iv)]

- a. The Permittee shall comply with all applicable provisions, including the requirements for emission standards, notification, testing, reporting, record keeping, and monitoring, contained in 15A NCAC 02D .0524 "New Source Performance Standards (NSPS)" as promulgated in 40 CFR Part 60 Subpart JJJJ – "Standards of Performance for Stationary Spark Ignition Internal Combustion Engines," including Subpart A "General Provisions," for the engines of natural gas-fired emergency generators (**ID Nos. IS-CPDEG01 and IS-CPDEG02B**).

General Provisions [15A NCAC 02Q .0508(f)]

- b. Pursuant to 40 CFR 60 .4246, The Permittee shall comply with the General Provisions of 40 CFR 60 Subpart A as presented in Table 3 of 40 CFR 60 Subpart JJJJ.

Emission Standards [15A NCAC 02Q .0508(f)]

- c. The Permittee shall comply with the emission standards for the rated size of the emergency service engine in Table 1 to 40 CFR 60 Subpart JJJJ. [40CFR 60.4233(d), Table 1]

Testing [15A NCAC 02Q .0508(f)]

- d. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limits given in condition c. above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524.

Monitoring [15A NCAC 02Q .0508(f)]

- e. The engines shall be equipped with a non-resettable hour meter. [40 CFR 60.4237(c)]

Compliance Requirements [15A NCAC 02Q .0508(b)]

- f. The Permittee shall comply with the emission standards in condition c. by purchasing engines certified to the emission standards in condition c. for the appropriate model year. [40 CFR 60.4243(b)(1)]
- g. The Permittee shall operate and maintain each certified engine and control device (if included) according to the manufacturer's emission-related written instructions. The Permittee shall also meet the requirements as specified in 40 CFR Part 1068, subparts A through D, as they apply. If the settings on an engine are adjusted according to and consistent with the manufacturer's instructions, the engine will not be considered out of compliance. [40 CFR 60.4243(a)(1), (b)(1)]
- h. The Permittee must operate and maintain the engines that achieve the stationary SI ICE emission standards as required in condition c. over the entire life of the engine. [40 CFR 60.4234]
- i. In order for each engine to be considered an emergency stationary spark ignition internal combustion engine under 40 CFR 60 Subpart JJJJ, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (1) through (3) of below, is prohibited. If an engine is not operated according to the requirements in paragraphs (1) through (3) below, it will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.
 - (1) There is no time limit on the use of an engine in emergency situations.
 - (2) The Permittee may operate each engine for any combination of the purposes specified in paragraph (2)(i) of this condition for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraph (3) of this condition counts as part of the 100 hours per calendar year allowed by this paragraph (2).
 - (i) Each engine may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of an engine beyond 100 hours per calendar year.
 - (3) Each engine may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in paragraph (2) of this condition. Except as provided in paragraph (3)(i) of this condition, the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.
 - (i) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:
 - (A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator;
 - (B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.
 - (C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.
 - (D) The power is provided only to the facility itself or to support the local transmission and distribution system.
 - (E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator. [40 CFR 60.4243(d)]

The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524, if the requirements in conditions e through i. are not met.

Recordkeeping [15A NCAC 02Q .0508(f)]

- j. The Permittee shall keep the following records:
 - i. All notifications submitted to comply with 40 CFR 60 and all documentation supporting any notification.
 - ii. Maintenance conducted on each engine.
 - iii. Documentation from the manufacturer that each engine is certified to meet the emission standards and information as required in 40 CFR parts 90, 1048, 1054, and 1060, as applicable.
 - iv. The hours of operation of each engine that is recorded through the non-resettable hour meter. The Permittee must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. 40 CFR 60.4245(a), (b) and 60.4243(a)(1)
- The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524, if the above recordkeeping requirements are not met.

Reporting [15A NCAC 02Q .0508(f)]

- k. No reporting is required.

2. 15A NCAC 02D .0524: NEW SOURCE PERFORMANCE STANDARDS

Applicability [15A NCAC 02Q .0508(f), 40 CFR 60.4200(a)(2)(ii)]

- a. The Permittee shall comply with all applicable provisions, including the requirements for emission standards, notification, testing, reporting, record keeping, and monitoring, contained in Environmental Management Commission Standard 15A NCAC 02D .0524 "New Source Performance Standards (NSPS)" as promulgated in 40 CFR Part 60 Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines," including Subpart A "General Provisions," for diesel-fired fire pump engines (**ID Nos. IS-CPDFP01 and IS-CPDFP02**).

General Provisions [15A NCAC 02Q .0508(f)]

- b. Pursuant to 40 CFR 60 .4218, The Permittee shall comply with the General Provisions of 40 CFR 60 Subpart A as presented in Table 8 of 40 CFR 60 Subpart IIII.

Emission Standards [15A NCAC 02Q .0508(f)]

- c. The Permittee shall comply with the emission standards in Table 4 of NSPS subpart IIII for all pollutants, for the same model year and maximum engine power for each engine. [40CFR 60.4205(c)]

Fuel Requirements [15A NCAC 02Q .0508(f)]

- d. The Permittee shall use diesel fuel in each engine with:
 - i. a maximum sulfur content of 15 ppm; and
 - ii. a minimum Cetane index of 40 or a maximum aromatic content of 35 volume percent. [40 CFR 60.4207(b) and 40 CFR 80.510(b)]

Testing [15A NCAC 02Q .0508(f)]

- e. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limits given in conditions c. and d. above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524.

Monitoring [15A NCAC 02Q .0508(f)]

- f. The Permittee shall:
 - i. equipped each engine with a non-resettable hour meter prior to startup; and

- ii. install a backpressure monitor that notifies the owner or operator when the high backpressure limit of the engine is approached on each engine that is equipped with a diesel particulate filter.
[40CFR 60.4209(a) and (b)]

Compliance Requirements [15A NCAC 02Q .0508(b)]

- g. The Permittee shall:
 - i. operate and maintain each engine and control device according to the manufacturer's emission related-written instructions over the entire life of the engine;
 - ii. change only those emission-related settings that are permitted by the manufacturer; and
 - iii. meet the requirements of 40 CFR 89, 94 and/or 1068 as applicable.
[40CFR 60.4206 and 60.4211(a)]
- h. The Permittee shall comply with the emission standards in condition c. by purchasing engines certified to the emission standards in condition c. Each engine shall be installed and configured according to the manufacturer's specifications. [40CFR 60.4211(c)]
- i. In order for each engine to be considered an emergency engine under this condition, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described below, is prohibited.
 - (1) There is no time limit on the use of the engines in emergency situations.
 - (2) The Permittee may operate each engine for any combination of the purposes specified in paragraph (i)(2)(i) of this condition for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraph (i)(3) of this condition counts as part of the 100 hours per calendar year allowed by this paragraph (i)(2).
 - (i) Each engine may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of the engine beyond 100 hours per calendar year.
 - (3) Each engine may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in paragraph (i)(2) of this condition. Except as provided in paragraph (i)(3)(i) of this condition, the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.
 - (i) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:
 - (A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator;
 - (B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.
 - (C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.
 - (D) The power is provided only to the facility itself or to support the local transmission and distribution system.
 - (E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local

transmission and distribution system operator may keep these records on behalf of the engine owner or operator.
[40CFR 60.4211(f)]

The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524, if the requirements in conditions f. through i. are not met.

Recordkeeping [15A NCAC 02Q .0508(f)]

- j. To assure compliance, the Permittee shall perform inspections and maintenance on each engine as recommended by the manufacturer per 40 CFR 60.4206 and 40 CFR 60.4211(a). The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
- i. the date and time of each recorded action;
 - ii. the results of each inspection;
 - iii. the results of any maintenance performed on the engine;
 - iv. any variance from manufacturer's recommendations, if any, and corrections made;
 - v. the hours of operation of the engine in emergency and non-emergency service. [40 CFR 60.4214(b)]
 - vi. if a PM filter is used, records of any corrective action taken after the backpressure monitor has notified the owner or operator that the high backpressure limit of the engine is approached [40 CFR 60.4214(c)]; and
 - vii. documentation from the manufacturer that the engine is certified to meet the emission standards in condition c.

The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

- k. No reporting is required.

3. 15A NCAC 02D .1111 MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY

Applicability [40 CFR 63.6585, 6590(a)(2)(iii)]

- a. The Permittee shall comply with all applicable provisions, including the monitoring, recordkeeping, and reporting contained in Environmental Management Commission Standard 15A NCAC 02D .1111 "Maximum Achievable Control Technology" (MACT) as promulgated in 40 CFR 63, Subpart ZZZZ, "National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines [RICE]" and Subpart A "General Provisions," for the engines of natural gas-fired emergency generators (**ID Nos. IS-CPDEG01 and IS-CPDEG02B**) and the diesel-fired fire pump engines (**ID Nos. IS-CPDFP01 and IS-CPDFP02**).

Stationary RICE subject to 40 CFR Part 60 [15 A NCAC 02Q. 0508(f)]

- b. Pursuant to 40 CFR 63.6590(c)(1), each engine must meet the requirements of 40 CFR 63 Subpart ZZZZ and Subpart A by meeting the applicable requirements of 40 CFR part 60 Subpart JJJJ or 40 CFR part 60 Subpart IIII. No further requirements apply for these engines under 40 CFR 63 Subpart ZZZZ and Subpart A.

ATTACHMENT II

Kevin and Karyn,

Kevin had passed along a few questions that arose from Karyn's investigation into the third quarter deviation report submitted by Clearwater Paper. On behalf of Clearwater, with this email I am providing some feedback from Clearwater regarding these issues to assist with the deviation report investigation and permit application review. Please see details below in green.

The Clearwater Shelby facility operates two paper machines, both are currently permitted with emission control devices. During the review of application 2300377.17A in 2017, DAQ requested that Clearwater update the emission calculations for both machines to use emission factors published by NCASI, which were viewed to be more representative than the emission factors supplied by the machine vendor. Using the NCASI emission factors, the uncontrolled potential emissions from each machine comply with the applicable PM emission limit. Additionally, CAM is no longer applicable since uncontrolled emissions from each machine are less than 100 tpy and the controls are not required to comply with any emission limit. In fact, an argument can be made that the systems are inherent to the paper machines since the primary function is to recover fiber. Based on this information, Clearwater requests that DAQ remove the enforceable permit conditions that require paper machine control devices, along with the associated control device monitoring, recordkeeping, and reporting, from the Title V permit. Specific responses to Karyn's questions are presented below.

- Karyn: Per R01 Review, the PM potential emissions for Paper Machine 1 before controls (92 lb/hr) are significantly higher than what Clearwater is submitting for Paper Machine 2 (13.7 lb/hr) before controls
 - Page 99 of Paper Machine 2 shows emission factors used in calcs, I do not have the application at MRO for Paper Machine 1 emission factors used.....this should be investigated
 - Page 93, Form B of the application shows Paper Machine 2 emissions (13.7 lb/hr)

Clearwater: When Paper Machine 1 was originally permitted in 2012, Clearwater projected uncontrolled PM emissions based on both the emission factors supplied by the machine vendor, and on engineering estimates. These same uncontrolled emissions were initially projected in the Part 1 application (2300377.17A) for Paper Machine 2 in 2017. However, during her review of that application, Jenny Kelvington (former permit engineer out of DAQ central office) requested that Clearwater revise the uncontrolled PM estimates, and she agreed that we should instead use NCASI emission factors which were considered more representative of the process. Documentation of these emission factors is shown in the attached spreadsheet from NCASI. Clearwater subsequently revised the PTE calculations for both Paper Machine 1 and Paper Machine 2. Please see pages 99, 100, and 101 of the Part 2 application (2300377.19A). The NCASI emission factors were also used in the emission calculations for the events identified in the quarterly deviation report.

- Karyn: Per R01 Review page 40, overall control device efficiency for Paper Machine 1 is estimated to be 90-93% which varies from what was submitted for Paper Machine 2, page 100 of application....Paper Machine 2 removal efficiency if 67%/37%/20%

Clearwater: Paper Machine 1 is a Metso Through Air Dry (TAD) machine designed with a venturi scrubber separator (CPDDUSTVSS) which has a higher control efficiency compared to the mist exhaust separators. Paper Machine 2 is a Valmet NTT machine designed for different product specifications than the Metso TAD machine. The Valmet NTT was designed by Valmet with mist exhaust separators, not a venturi scrubber as detailed in 2300377.19A. As a result, the overall control efficiency of Paper Machine 2 is less than that of Paper Machine 1.

- Karyn: Page 93, Form B for Paper Machine 2 shows potential emissions before controls to be 13.7 lbs/hr
 - Current limit for PM is 24.0 lbs/hr per R01 review
 - PM emissions need to be further evaluated, why would the facility spend significant money on 3 control devices (and continued maintenance costs) for paper machine 2, if they claim the potential PM emissions before controls is below the PM limit? In this claim, controls are not needed.

Clearwater: Metso designed and Clearwater installed the dust venturi scrubber separator on Paper Machine 1 and the mist exhaust separators on Paper Machines 1 and 2 for the primary purpose of recovering valuable fiber for reuse. During permitting, however, the equipment was evaluated as emissions control, not inherent process equipment. Using the originally projected uncontrolled PM emissions from Paper Machines 1 and 2 based on earlier emission factors, controls were required to comply with the PM emission limit. However, based on the more representative NCASI emission factors, Clearwater agrees with Karyn's statement that controls are not needed at either machine to comply. Since these devices are not required to demonstrate compliance with an emission limit, Clearwater requests that enforceable requirements to operate the Paper Machines with controls be removed from the permit.

- Karyn: Per R01 Review page 41, for the facility to comply with 2D .0515 for Paper Machine 1 the control devices must be used, however Paper Machine 2 claims lower emissions before controls but they still installed the controls, does not make sense.
 - Also, this section in Review R01 states that CAM is required for Paper Machine 1 during the next significant permit Modification, which is occurring now.
 - Paper Machine 1 & Paper Machine 2 are the exact same units, and should not have such a significant difference in emissions based on these two applications (R01 and the current one). There may be more current emission factors used as shown on Page 99 of the application, however, they did not submit NCASI Technical Bulletin No. 1020 to illustrate the logic behind these emission factors (I could not access this online, you must be a member).

Clearwater: As discussed above, the installation of collection equipment was designed by Metso and Valmet primarily for fiber capture and reuse. Emissions control is a co-benefit. As summarized above, the PTE calculations for both Paper Machine 1 and Paper Machine 2 were revised with DAQ's input in 2017 based on more representative emission factors from NCASI (see attached spreadsheet). Based on these emission factors controls are not required to comply with the applicable PM emission limit. Additionally, since uncontrolled PM emissions from each machine are < 100 TPY and the control devices are not required to comply with an applicable emission limit, CAM is not triggered for either paper machine. NCASI Technical Bulletin No. 1020 is attached.

Clearwater appreciates Karyn's thorough review of these circumstances. Review of this background to respond to DAQ presents a good opportunity to clarify the necessary compliance obligations and emission factors for the next Title V. Again, Clearwater requests removing the enforceable requirement to operate the control devices from the Title V permit and to comply with CAM. If DAQ agrees, Clearwater can provide updated PTE calculations and application forms for both paper machines as a revision to 2300377.19A.

If DAQ would find it beneficial, Clearwater can schedule a conference call to discuss the control devices in more detail.

Thank You.

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